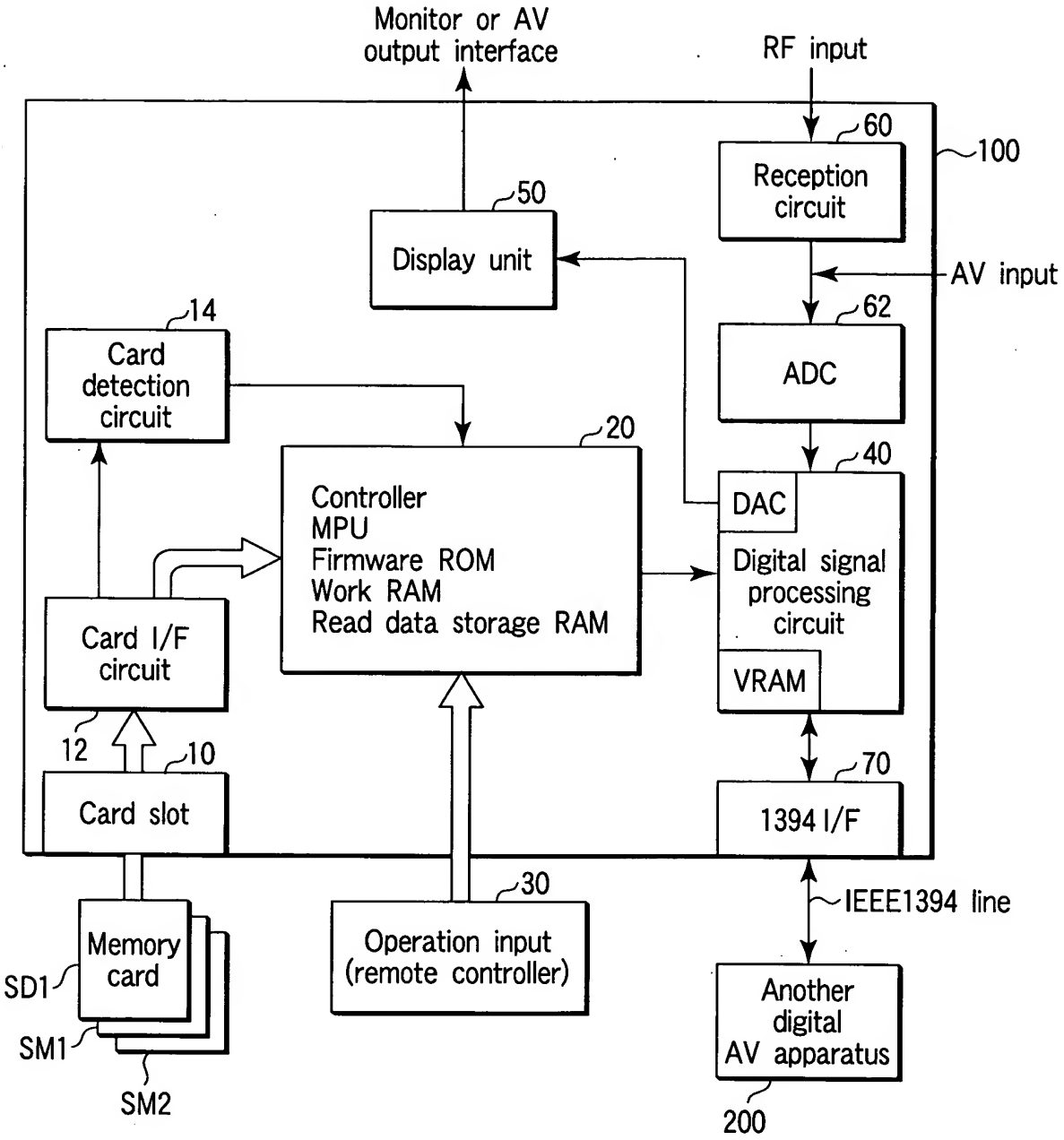
Monitor or AV output interface
RF input
60
100
Reception circuit
50
Display unit
AV input
14
62
Card detection circuit
ADC
20
40
Controller
MPU
Firmware ROM
Work RAM
Read data storage RAM
DAC
Digital signal processing circuit
VRAM
Card I/F circuit
12
10
70
Card slot
1394 I/F
30
IEEE1394 line
Memory card
SD1
SM1
SM2
Operation input (remote controller)
Another digital AV apparatus
200

FIG. 1

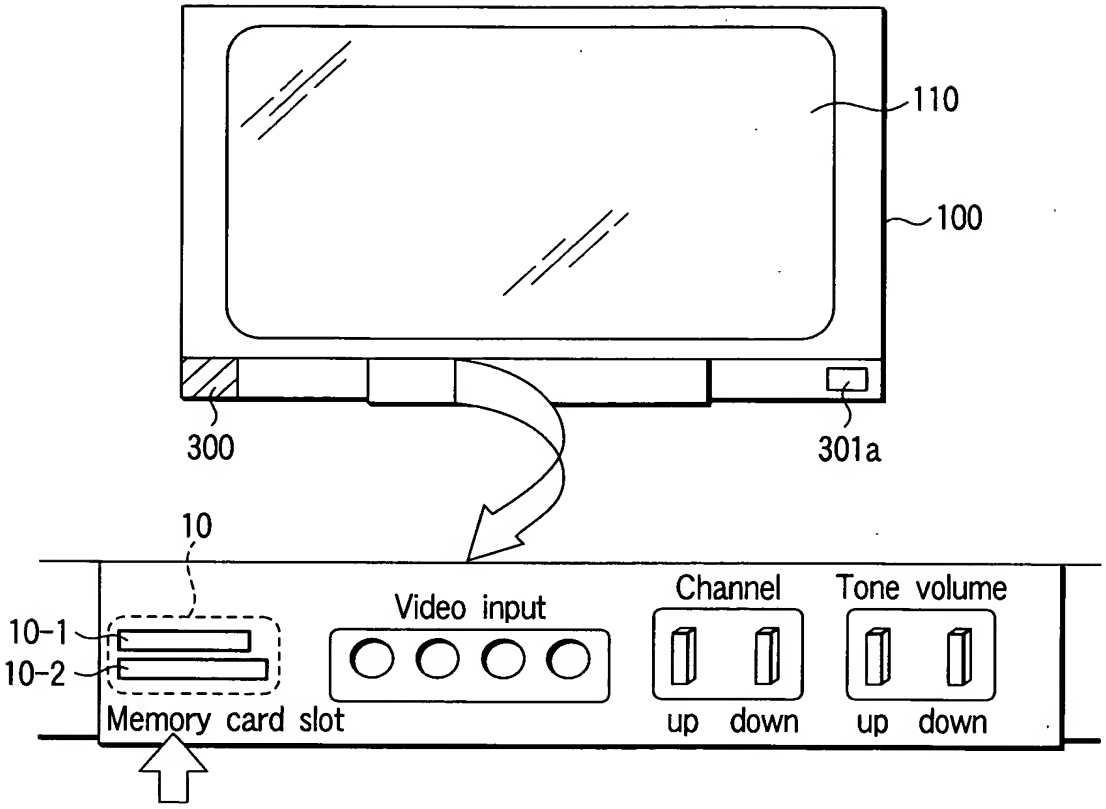
110
100
300
301a
10
10-1
10-2
Memory card slot
Video input
Channel
up
down
Tone volume
up
down

FIG. 2

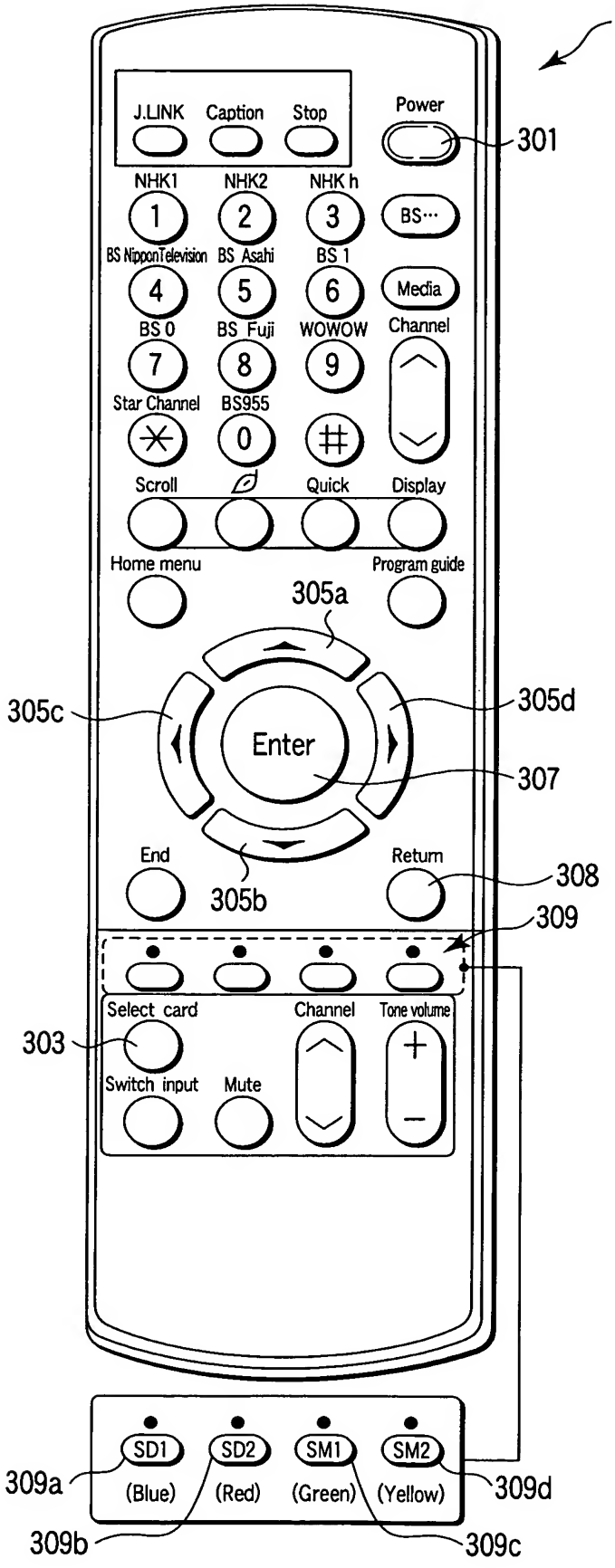
30
J.LINK
Caption
Stop
Power
301
NHK1
NHK2
NHK h
BS···
BS NipponTelevision
BS Asahi
BS 1
Media
BS 0
BS Fuji
WOWOW
Channel
Star Channel
BS955
Scroll
Quick
Display
Home menu
Program guide
305a
305c
305d
Enter
307
End
305b
Return
308
309
Select card
Channel
Tone volume
303
Switch input
Mute
SD1
SD2
SM1
SM2
309a
(Blue)
(Red)
(Green)
(Yellow)
309d
309b
309c

FIG. 3

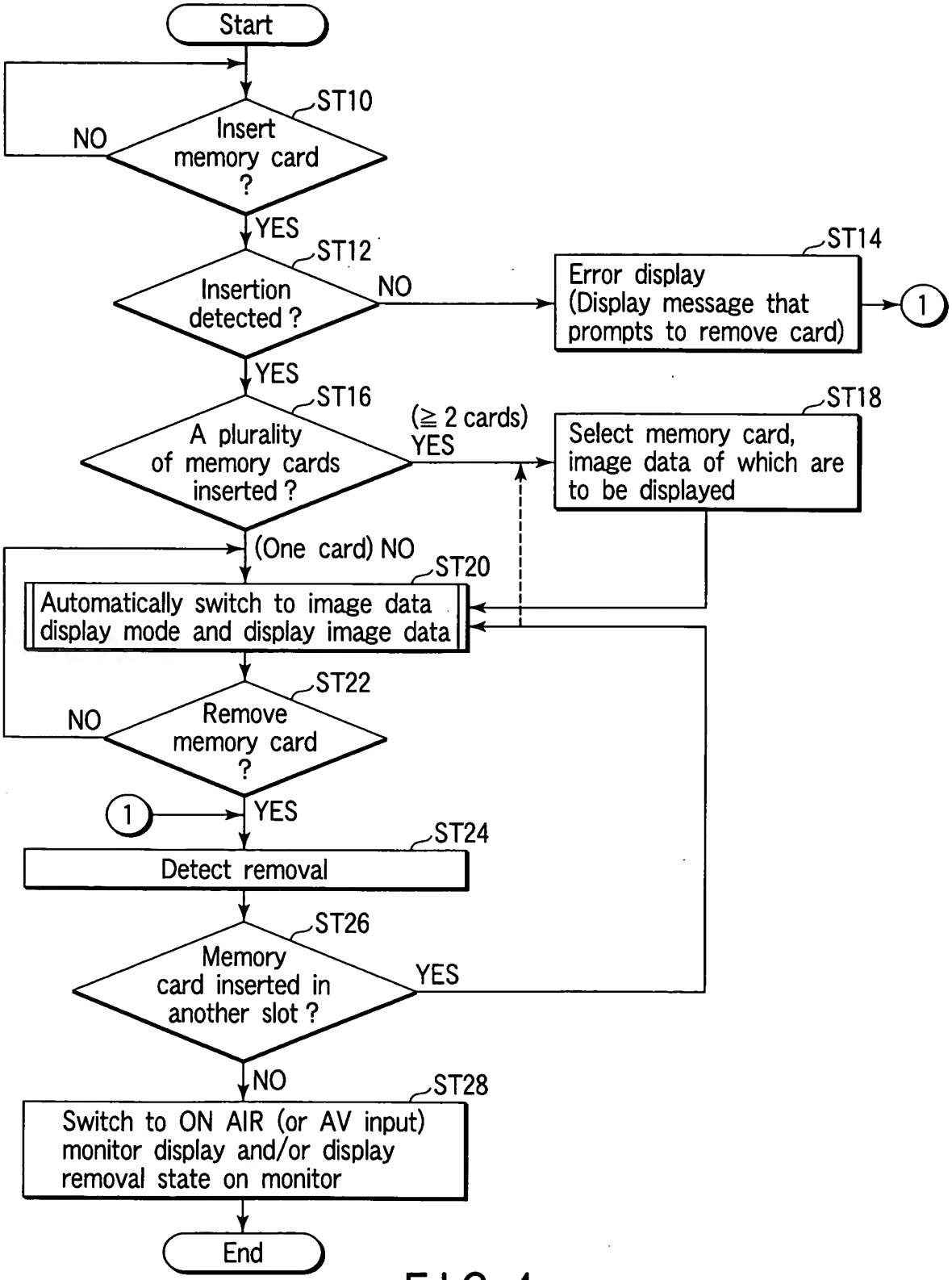
Start
ST10
Insert memory card ?
NO
YES
ST12
Insertion detected ?
NO
ST14
Error display (Display message that prompts to remove card)
1
YES
ST16
A plurality of memory cards inserted ?
(≧ 2 cards) YES
ST18
Select memory card, image data of which are to be displayed
(One card) NO
ST20
Automatically switch to image data display mode and display image data
ST22
Remove memory card ?
NO
1
YES
ST24
Detect removal
ST26
Memory card inserted in another slot ?
YES
NO
ST28
Switch to ON AIR (or AV input) monitor display and/or display removal state on monitor
End

FIG. 4

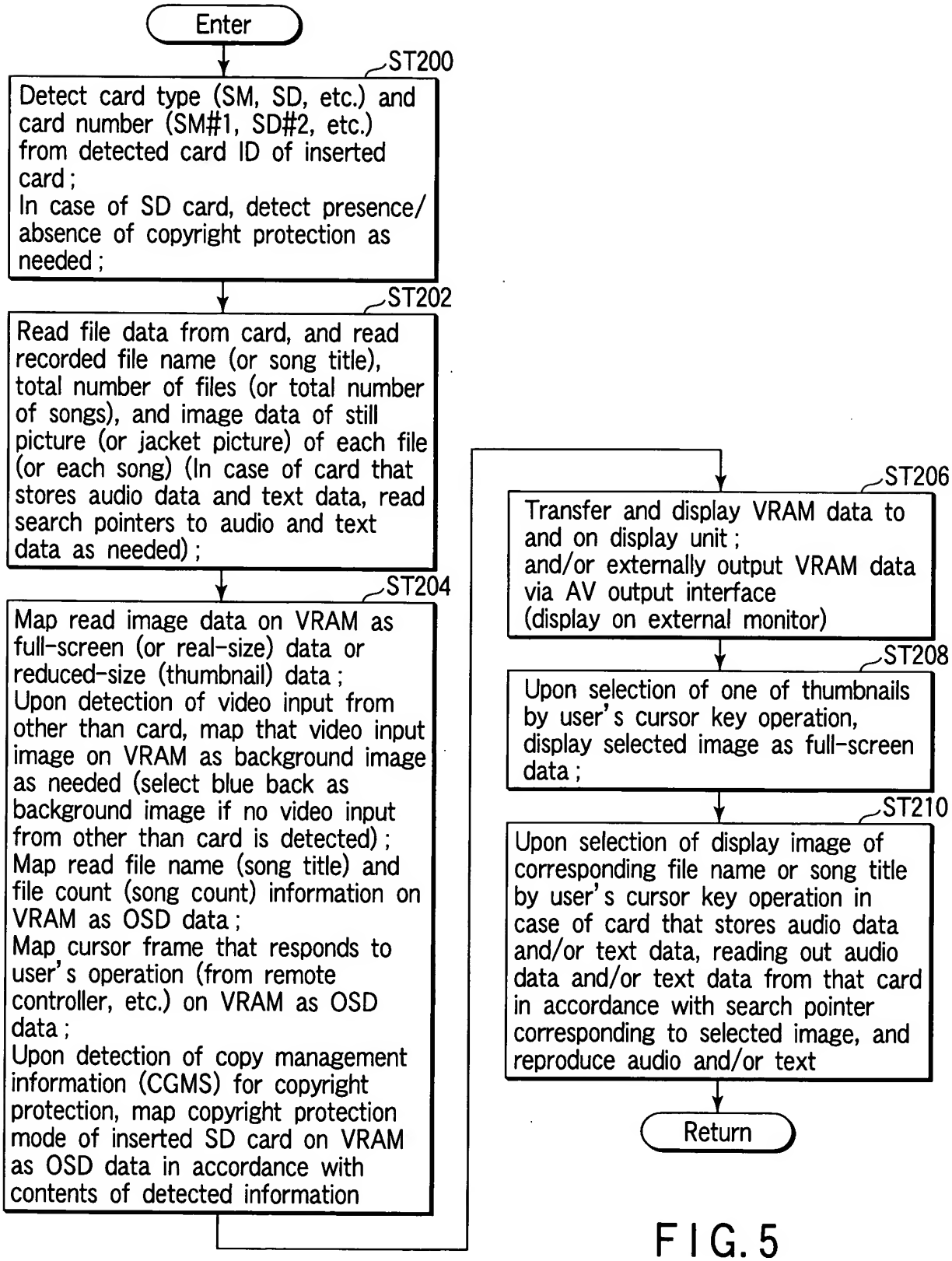
Enter
ST200
Detect card type (SM, SD, etc.) and card number (SM#1, SD#2, etc.) from detected card ID of inserted card;
In case of SD card, detect presence/absence of copyright protection as needed;
ST202
Read file data from card, and read recorded file name (or song title), total number of files (or total number of songs), and image data of still picture (or jacket picture) of each file (or each song) (In case of card that stores audio data and text data, read search pointers to audio and text data as needed);
ST204
Map read image data on VRAM as full-screen (or real-size) data or reduced-size (thumbnail) data;
Upon detection of video input from other than card, map that video input image on VRAM as background image as needed (select blue back as background image if no video input from other than card is detected);
Map read file name (song title) and file count (song count) information on VRAM as OSD data;
Map cursor frame that responds to user's operation (from remote controller, etc.) on VRAM as OSD data;
Upon detection of copy management information (CGMS) for copyright protection, map copyright protection mode of inserted SD card on VRAM as OSD data in accordance with contents of detected information
ST206
Transfer and display VRAM data to and on display unit;
and/or externally output VRAM data via AV output interface (display on external monitor)
ST208
Upon selection of one of thumbnails by user's cursor key operation, display selected image as full-screen data;
ST210
Upon selection of display image of corresponding file name or song title by user's cursor key operation in case of card that stores audio data and/or text data, reading out audio data and/or text data from that card in accordance with search pointer corresponding to selected image, and reproduce audio and/or text
Return

FIG. 5

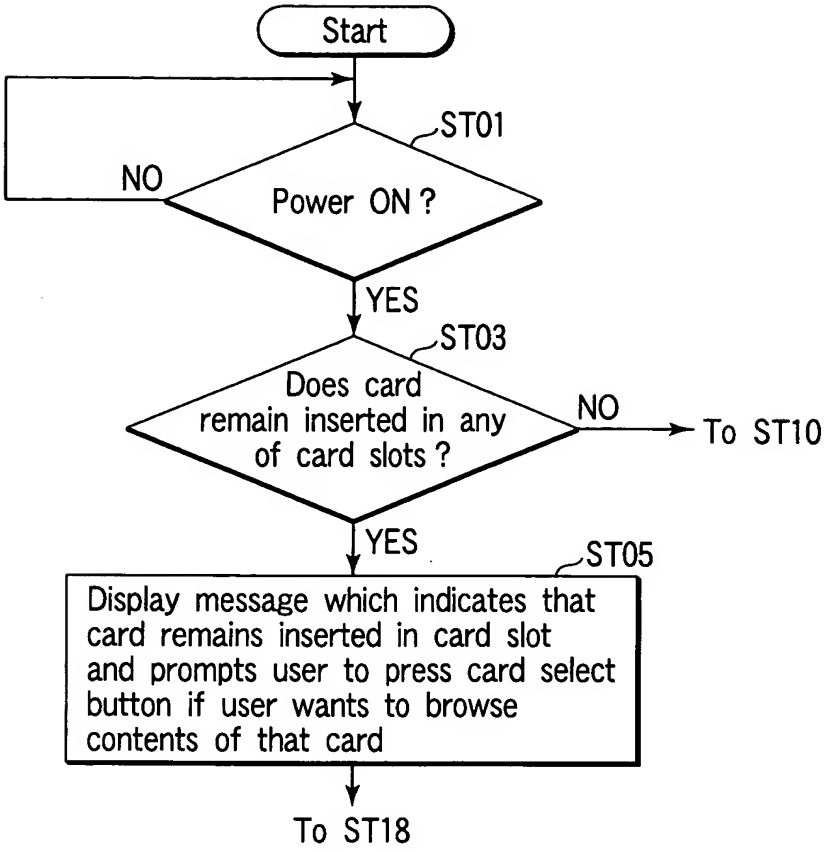
Start
ST01
NO
Power ON ?
YES
ST03
Does card remain inserted in any of card slots ?
NO
To ST10
YES
ST05
Display message which indicates that card remains inserted in card slot and prompts user to press card select button if user wants to browse contents of that card
To ST18

FIG. 6

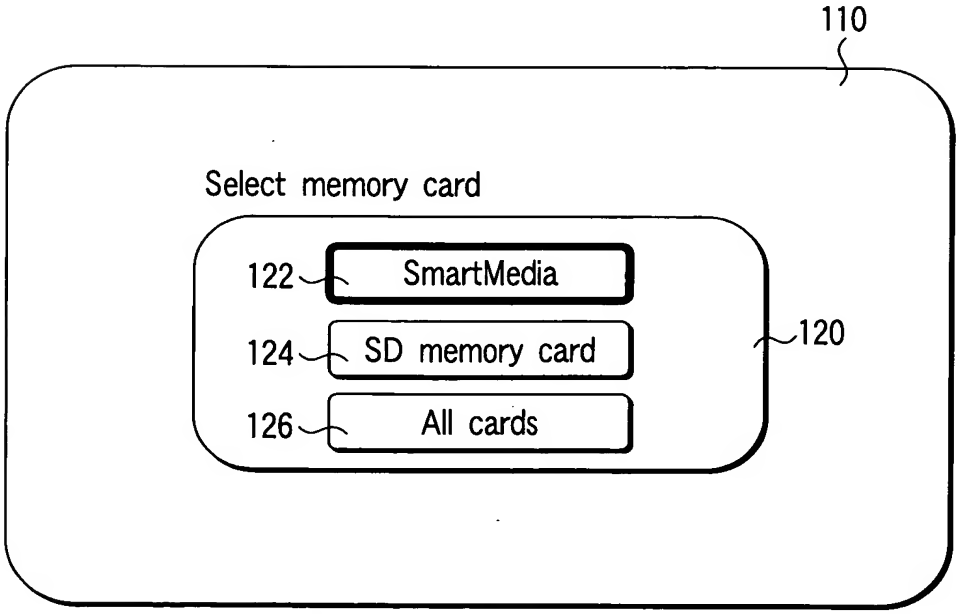
110
Select memory card
122
SmartMedia
124
SD memory card
126
All cards
120

FIG. 7

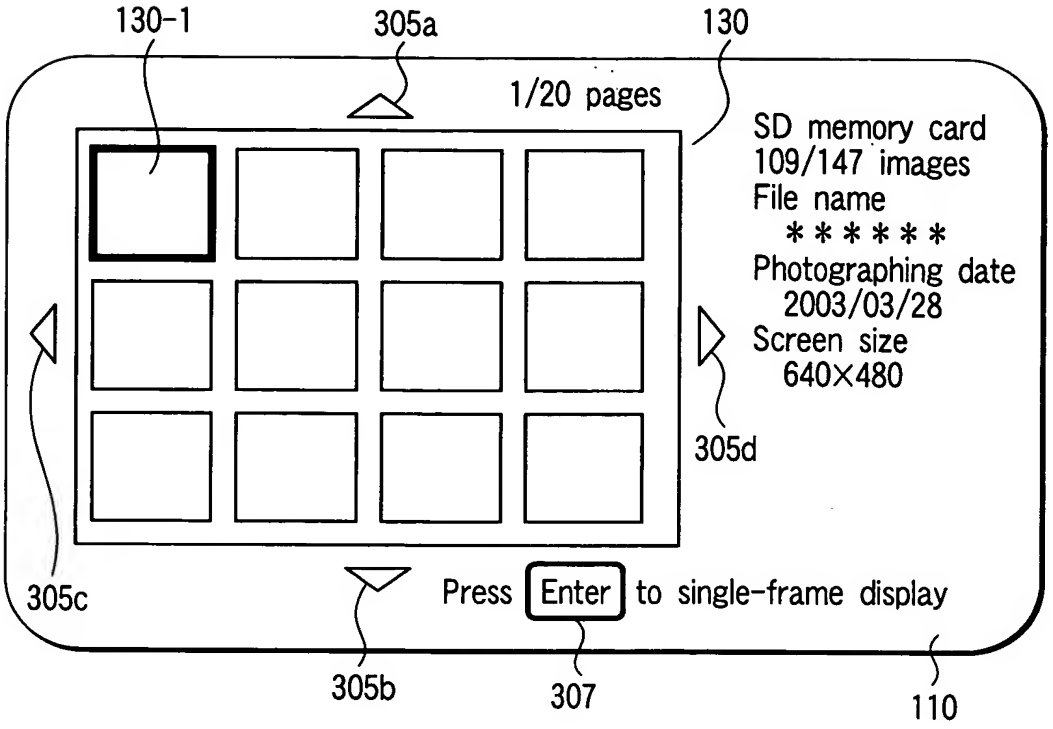
130-1
305a
130
1/20 pages
SD memory card
109/147 images
File name
******
Photographing date
2003/03/28
Screen size
640×480
305d
305c
Press Enter to single-frame display
305b
307
110

FIG. 8

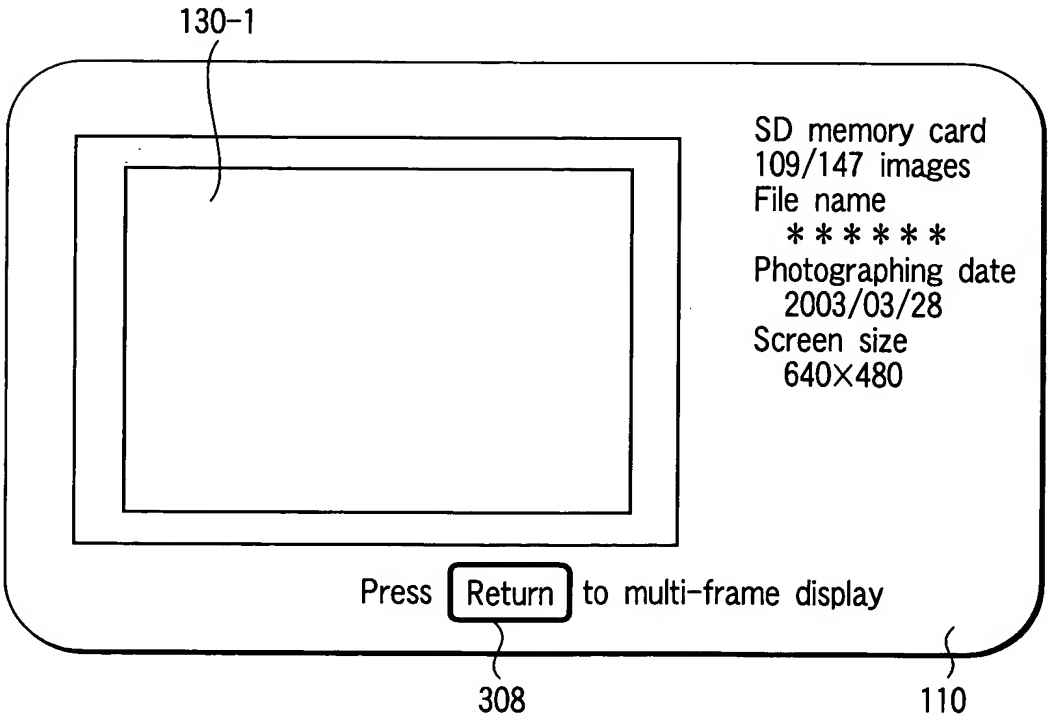
130-1
SD memory card
109/147 images
File name
******
Photographing date
2003/03/28
Screen size
640×480
Press Return to multi-frame display
308
110

FIG. 9

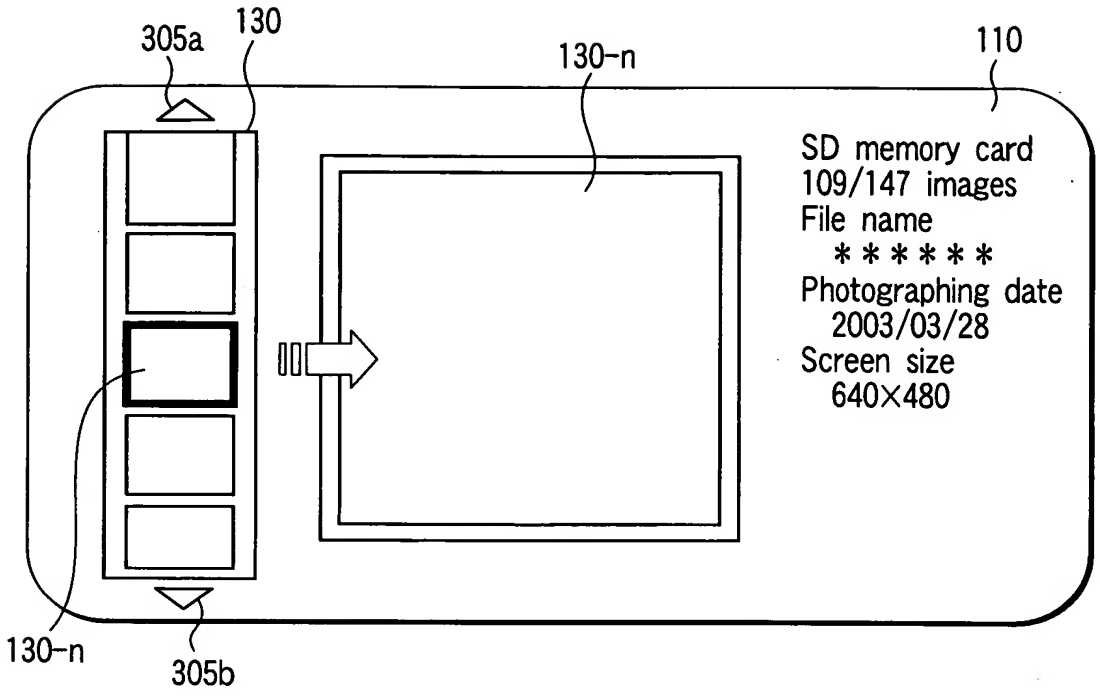
305a
130
130-n
110
SD memory card
109/147 images
File name
******
Photographing date
2003/03/28
Screen size
640×480
130-n
305b

FIG. 10

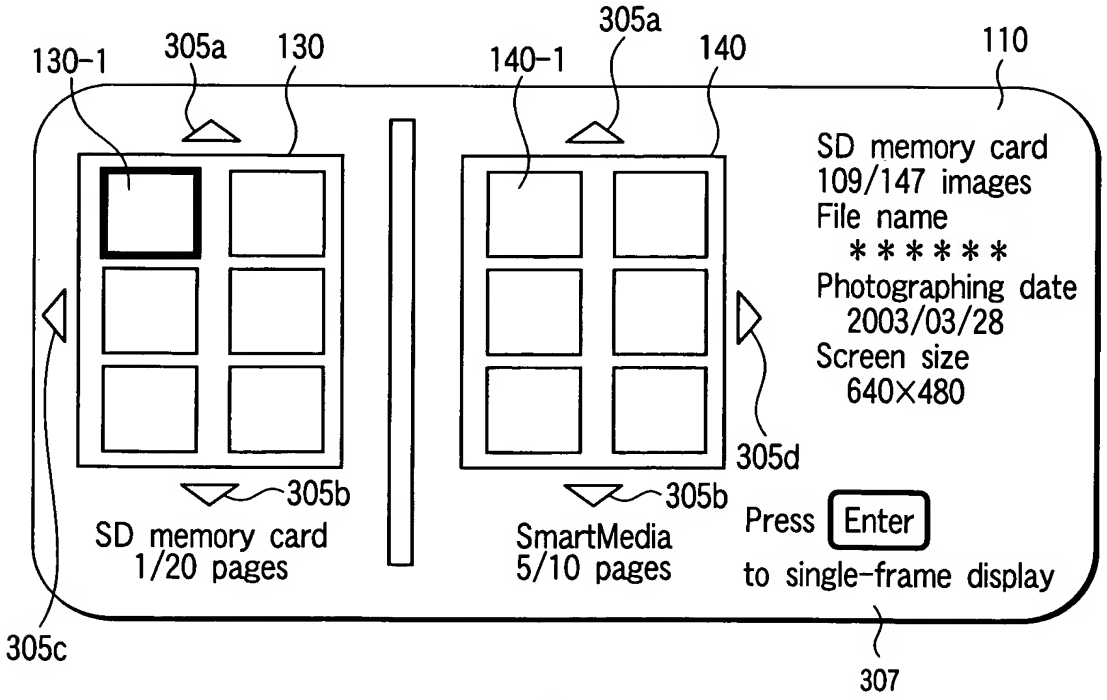
130-1
305a
130
140-1
305a
140
110
SD memory card
109/147 images
File name
******
Photographing date
2003/03/28
Screen size
640×480
305d
305b
305b
SD memory card
1/20 pages
SmartMedia
5/10 pages
Press Enter
to single-frame display
305c
307

FIG. 11

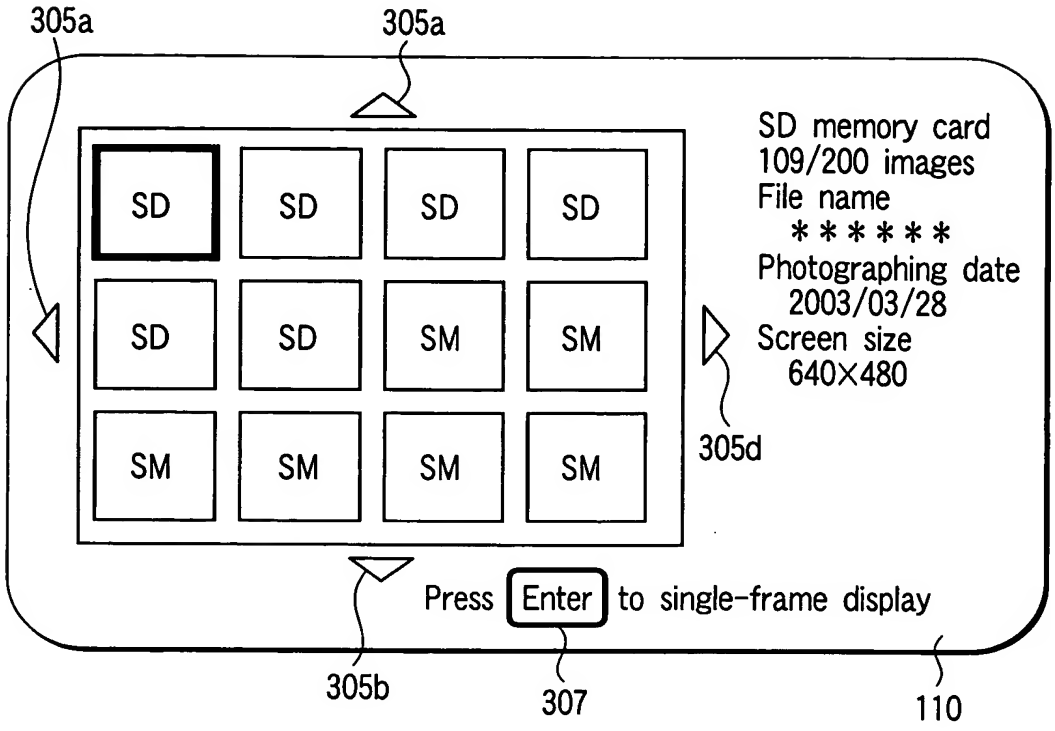
305a
305a
SD
SD
SD
SD
SD
SD
SM
SM
SM
SM
SM
SM
SD memory card
109/200 images
File name
******
Photographing date
2003/03/28
Screen size
640×480
305d
Press Enter to single-frame display
305b
307
110

FIG. 12

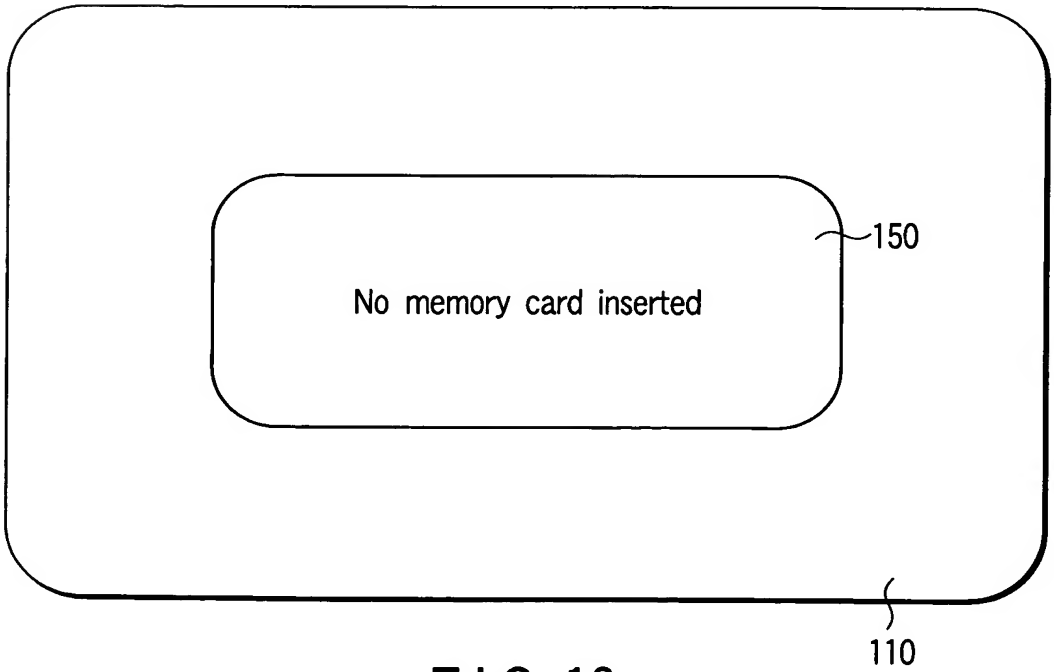
No memory card inserted
150
110

FIG. 13

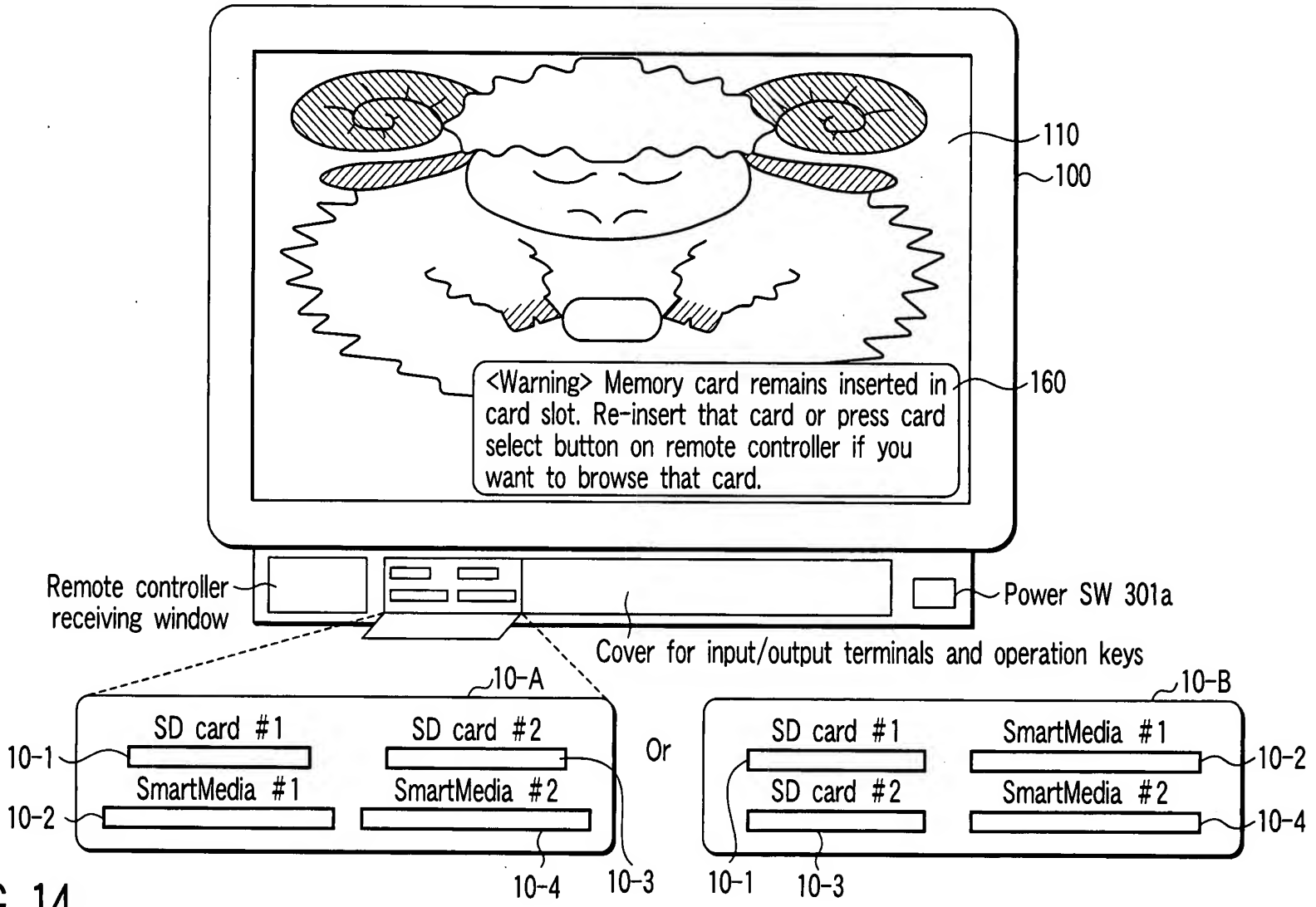
110
100
<Warning> Memory card remains inserted in card slot. Re-insert that card or press card select button on remote controller if you want to browse that card.
160
Remote controller receiving window
Power SW 301a
Cover for input/output terminals and operation keys
10-A
SD card #1
SD card #2
10-1
SmartMedia #1
SmartMedia #2
10-2
10-4
10-3
Or
10-B
SD card #1
SmartMedia #1
10-2
SD card #2
SmartMedia #2
10-4
10-1
10-3

FIG. 14

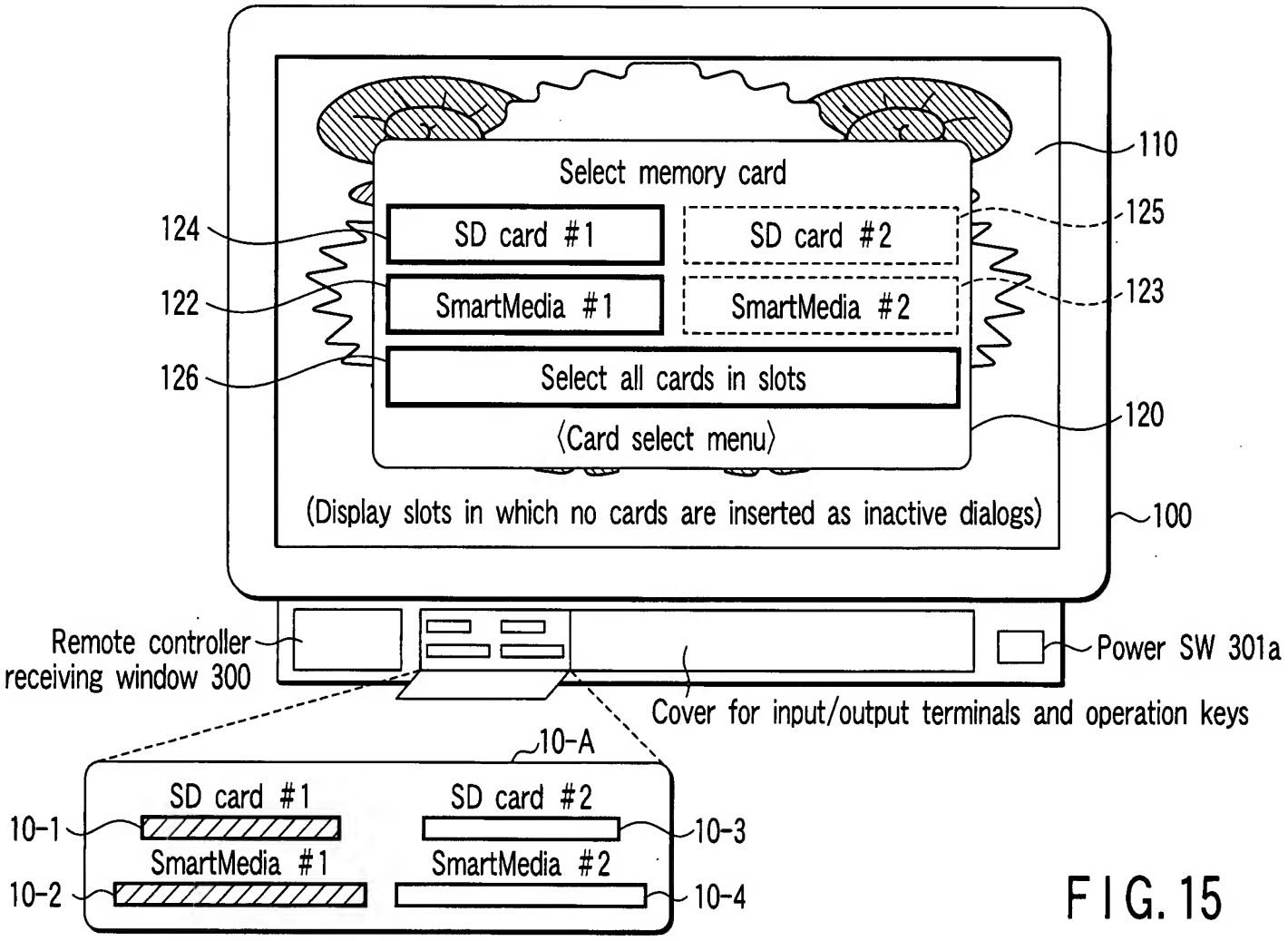
Select memory card
SD card #1
SD card #2
SmartMedia #1
SmartMedia #2
Select all cards in slots
〈Card select menu〉
(Display slots in which no cards are inserted as inactive dialogs)
110
125
123
120
100
124
122
126
Remote controller receiving window 300
Power SW 301a
Cover for input/output terminals and operation keys
10-A
SD card #1
SD card #2
SmartMedia #1
SmartMedia #2
10-1
10-2
10-3
10-4

FIG. 15